IN THE CLAIMS:

Amend claims 2, 4, 7, 10, 13, and 16 as follows:

a1 2. (Amended) A recombinant bacterium containing the [double-straded] double-stranded DNA molecule of claim 1.

a2 4(2). (Amended) [A] An isolated DNA molecule comprising SEQ ID NO:4.

a3 7(3). (Amended) [A] An isolated DNA molecule comprising SEQ ID NO:6.

a4 10(4). (Amended) [A] An isolated DNA molecule comprising SEQ ID NO:7.

a5 13(5). (Amended) [A] An isolated DNA molecule comprising SEQ ID NO:8.

a6 16(6). (Amended) [A] An isolated DNA molecule comprising SEQ ID NO:17.

## REMARKS

### I. Rejection under 35 U.S.C. § 101

Claims 4, 7, 10, 13, and 16 are rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Applicants have amended the claims to recite "an isolated" DNA molecule as suggested by the Examiner. Therefore, this rejection should be withdrawn.

### II. Rejection under 35 U.S.C. 112, second paragraph

Claims 1-3, 5-6, 8, 9, 11-12, 14-15, and 17-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Applicants respectfully traverse this rejection.

The Examiner asserts that applicants have not described hybridization conditions under which hybridization must occur. Applicants contend, however, that an individual of ordinary

skill in the art, is aware that a number of methods exist for the identification of recombinant clones which rely upon DNA-DNA hybridization. Furthermore, applicants disclose at page 16, lines 25-26 that, "Cloning and genetic techniques, unless otherwise indicated, were generally those described (Maniatis et al., 1982)." This reference, widely used by those skilled in the art, includes various hybridization-based approaches to identifying recombinant clones including in situ hybridization (pages 312-328), hybridization selection (pages 329-352), and Southern hybridization (pages 382-389; please find attached pages 387-389 which describe conditions for hybridization of Southern filters). One could easily apply these well known techniques using, for instance, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO: 6, SEQ ID NO:7, or SEQ ID NO:8 as a probe to identify novel genes encoding glyphosate oxidoreductase enzymes. It is well known that some optimization of hybridization and washing conditions is generally required when using a new probe, however such optimization would not be considered undue experimentation by the skilled individual in the art. In addition, the specification includes clear descriptions of the hybridization conditions used for PCR-based approaches [*e.g.*, column 20, lines 55-59; column 22, line 16].

The Examiner asserts that, absent a statement of such hybridization conditions, these claims read on any gene encoding a glyphosate oxidoreductase. Applicants respectfully point out that the specification clearly indicates another approach for cloning additional novel glyphosate oxidoreductase genes. That is, an approach which relies on homology to the herein described glyphosate oxidoreductase genes is, in fact, not the only available approach [column 21, lines 48-61]. The specification further points out that a procedure based on the conferring of a glyphosate utilization ability or glyphosate tolerance on E. coli could provide an alternative approach, or one to be used in combination with homology-based approaches (*e.g.*, Southern

hybridization). Having established an acceptable level of activity for a particular strain using such methods, a sequence such as SEQ ID NO:3 can be used as a probe, without undue experimentation, to identify glyphosate oxidoreductase genes that may be responsible for that activity.

Thus, the DNA molecule of the present claims, in addition to encoding a very useful glyphosate oxidoreductase enzyme, also represents a powerful tool for the further identification, through hybridization methods well known in the art, of homologous glyphosate oxidoreductase enzymes which may possess improved or altered properties. As the applicants have provided an important inventive contribution by identifying the DNA molecule of SEQ ID NO:3, they should be entitled to the use of this molecule as a tool for the further discovery of glyphosate oxidoreductase genes to which it can hybridize. Although unlikely, it is of course unknown at present whether all occurring enzymes possessing useful levels of glyphosate oxidoreductase activity share detectable sequence homology, via Southern hybridization or the related hybridization techniques described in the specification, with the DNA sequences described and claimed herein. If that were to be the case, the applicants respectfully assert that their invention entitles them to claim such enzymes. If that is not the case, the non-homology based approach described herein is representative of methods by which such putative enzymes, and the genes encoding them, might be identified.

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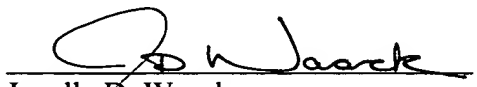
The Examiner is invited to contact the undersigned attorney at (713) 787-1686 with any questions comments relating to this patent application.

Should any other fee be required for any reason in connection with this Response, the Assistant Commissioner is authorized to deduct said fees from Howrey Simon Arnold & White Deposit Account No. 01-2508/MONY:140/WAA.

Respectfully submitted,



Janelle D. Waack
Reg. No. 36,300
Attorney for the Assignee
PHARMACIA CORPORATION

HOWREY SIMON ARNOLD & WHITE
750 Bering Drive
Houston, TX 77057-2198
(713) 787-1400

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